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## REMARKS

### I. Introduction

This Amendment is a full and timely response to the non-final Office Action of August 10, 2005.

Claims 1-62, 65-69, and 71-85 are pending in this application. Claims 63, 64, and 70 have been canceled. Claims 21, 58, 62, and 69 have been amended. No new matter has been added.

### II. 35 U.S.C. § 103

#### A. Claims 1-3, 6, 9-36, 41-42, 51-55, 58-85

The Examiner rejected Claims 1-3, 6, 9-36, 41-42, 51-55, and 58-85 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,500,857 to Nakata in view of U.S. Patent No. 5,866,898 to Hodgson, et al. The Examiner stated that Nakata discloses a bi-directional optical transport system, but fails to explicitly disclose a doped optical fiber amplifier and pump source. The Examiner further stated that Hodgson et al. teaches use of Erbium doped fiber amplifiers for use in a bi-directional optical transmission system. The Examiner concluded that the Nakata patent and the Hodgson et al. patent are from the same field of endeavor and that it would therefore have been obvious to one having ordinary skill at the time the invention was made to use the Erbium doped fiber amplifier of the Hodgson et al. patent in the system disclosed in the Nakata patent.

Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof because the Examiner has not established a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the Examiner must show that:

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(1) there is some suggestion or motivation to one of ordinary skill in the art to combine the teachings of the references; (2) there is a reasonable expectation of success; and (3) the references teach or suggest all of the claimed limitations. The Examiner has failed to show that there is a motivation to combine or modify the teachings of Nakata and Hodgson et al. Moreover, the combination of Nakata and Hodgson et al. fails to disclose or suggest all of the claimed elements.

1. No Motivation to Combine

As the Examiner observed, Nakata does not teach a doped optical fiber amplifier and pump source for amplifying optical signals in the communication system. In addition, it is important to observe that Nakata makes no suggestion whatsoever for use of amplification in the disclosed optical communication system. Rather, Nakata actually teaches away from use of an amplifier. Due to the token-based topology of the Nakata network, Nakata discloses selecting the intensity of the optical signal so that after it has "circulated in the loop once [it] is sufficiently smaller than the light intensity at the start of transmission to be negligible." Nakata, Col. 6, line 67 to Col. 7, line 4. The use of an amplifier in such a network would be opposite to the teachings of Nakata.

The Examiner has also stated that Hodgson et al. teaches use of a doped optical fiber amplifier and associated pump source. But, Hodgson et al. does so in the context of an array of fiber optic interferometric sensors. Hodgson et al. does not teach or suggest that such amplification would be useful or desirable in an optical transport system, such as the one of the present invention, which differs from a sensor array and may require access and protocol considerations that render the communications problem distinct from the sensor problem.

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Thus, Applicants respectfully submit that the Examiner has not demonstrated that the cited references contain any teaching, suggestion, or motivation to combine the references in such a way to arrive at the specific combination as claimed by the Applicants. Accordingly, one having ordinary skill at the time of the invention would not have been motivated to combine the teachings of the Nakata patent with the teachings of the Hodgson et al. patent to achieve the present invention as claimed in the currently pending claims. Therefore, the Examiner has not properly established a motivation to combine these two references and has not made a *prima facie* case of obviousness.

## 2. References Do Not Teach or Suggest All Claimed Elements

Nakata discloses an optical communication system in which data lines and access control lines are functionally distinct. The Nakata patent further discloses multiple embodiments in which the functionally distinct data and control lines are organized into differing architectures or topologies. The embodiments utilizing various topologies are distinct, and Nakata gives no motivation or suggestion for combining the different embodiments utilizing these different topologies into a single system. In fact, by presenting distinct embodiments for the various topologies, Nakata teaches their separate and distinct use. The inability of the prior art to integrate optical busses with distinct topologies into a single system motivated the development of the present claimed invention. *See* Original Patent, U.S. Patent No. 5,898,801, Col. 1, lines 20-29.

Moreover, the claimed invention is protocol independent, as recited for example in Claim 1. Nakata, on the other hand, relies on a token passing access protocol scheme and thus requires a control functionality separate from the data transmission functionality. *See*,

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*e.g.*, Nakata, Col. 2, line 65 to Col., line 2 and Figures 6A-6C. As a result, Nakata is not protocol independent, but instead relies on a very specific access protocol approach. Accordingly, one having ordinary skill in the art at the time the invention was made would not have been motivated to look to the Nakata patent, as the Nakata approach presented one or more problems to be overcome.

In particular, Nakata does not teach a translation logic device connected between the optical interface device and the data terminal equipment for performing required protocol translation for the data terminal equipment as claimed in Claims 1 and 58. The communication control circuit disclosed by Nakata at Col. 6, line 44 and Figure 5, which the Examiner appears to cite as being the claimed translation logic device, is specifically directed to the demand-assign wavelength-division multiplexing access scheme, as stated at Nakata, Col. 5, lines 6-8. As a result, it implements a specific access scheme and does not perform a protocol translation for the data terminal equipment. Thus, Nakata does not teach all of the claimed limitations of Claim 1 or of Claim 58.

In addition, Nakata does not teach full duplex communication as claimed in Claim 69.

#### **B. Claims 4-5**

The Examiner rejected Claim 4-5 under 35 U.S.C. §103(a) as being unpatentable over Nakata in view of Hodgson, et al. For the reasons stated above, Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

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**C. Claims 7-8**

The Examiner rejected Claims 7-8 under 35 U.S.C. §103(a) as being unpatentable Nakata in view of Hodgson, et al. in further view of U.S. Patent No. 4,959,837 to Fevrier, et al. For the reasons stated above, Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

**D. Claims 37-40, 43-50, 56-57**

The Examiner rejected Claims 37-40, 43-50, 56-57 under 35 U.S.C. §103(a) as being unpatentable over Nakata in view of Hodgson. For the reasons stated above, Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

**INTERVIEW SUMMARY**

Pursuant to the requirements of 37 C.F.R. § 1.133 and MPEP § 713.04, Applicants submit this Interview Summary. This Interview Summary is a summary of the telephonic interview between Supervisory Patent Examiner Brian Healy and Michael Turton, Applicants' representative, on November 9, 2005. Also participating in the interview were Examiner Eric Wong, and Jim Sangston for the Applicants. Applicants respectfully request that this Interview Summary be entered into the record of the above-referenced application.

During the interview: (a) no exhibit was shown nor any demonstration conducted; (b) the basis of the rejection of the claims under 35 U.S.C § 103 based on U.S. Patent No. 5,500,857 to Nakata in view of U.S. Patent No. 5,866,898 to Hodgson, et al. was discussed.

Applicants' representative contended that there is no suggestion or motivation to one of ordinary skill in the art to combine the teachings of Nakata and Hodgson et al. to achieve


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the claimed invention. Examiner Healey agreed to favorably consider Applicants' arguments.

### CONCLUSION

The foregoing is submitted as a full and complete response to the Office Action of August 10, 2005. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an amendment, please call 404 815 6061.

Respectfully submitted,



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